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EXAMINER
HSU, JONI

ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,47-59 and 72* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,47-59 and 72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Applicant's arguments filed April 12, 2006 have been fully considered but they are not

persuasive.

2.   Applicant argues that since Epard (US005241625A) discloses the use of QuickDraw 21

and bitmaps and therefore fails to disclose the requisite motivation to combine with the Yang

(US 20020035596A1) reference and teaches away from such a combination (page 16). The

Examiner fails to consider the cited references as a whole, show a suggestion or desirability, and

thus the obviousness, of making the proposed combination in either reference, and show

reasonable expectation of success (page 17). The Examiner uses impermissible hindsight vision

afforded by the claimed invention to propose an improper combination (page 18).

In reply, the Examiner disagrees. In response to applicant's argument that there is no

suggestion to combine the references, the examiner recognizes that obviousness can only be

established by combining or modifying the teachings of the prior art to produce the claimed

invention where there is some teaching, suggestion, or motivation to do so found either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art.

See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347,

21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Epard and Yang are both directed to

communication of graphical display data between two computers (*sharing computer screen*

information among computers translates graphics messages of one computer into the graphics

procedure calls of another computer, Col. 3, lines 5-43 in Epard; *communication between an*

application server and a thin client, graphical display data transmitted, [0002] in Yang). It

would be obvious to modify the device of Epard so that the off-screen bitmaps are stored in an

off-screen memory with available memory as suggested by Yang (*allocating a first memory*

region to represent the off-screen surface from a plurality of available memory regions in the

client's memory, [0017] in Yang) because Yang discloses the advantage of reducing the amount

of graphical data transmitted between the server and the client, which increases the performance

speed ([0004, 0005] in Yang). Therefore, Yang discloses that modifying the device of Epard to

include this off-screen memory would improve the performance of the device of Epard, and

therefore gives motivation to combine Yang and Epard. Epard would be modified by having

QuickDraw copy bit images to a bitmap off-screen (Col. 8, lines 6-10 in Epard) within an off-

screen memory with available memory, as suggested by Yang, so that images can be displayed

more quickly, which is the intended purpose of Epard (Col. 3, lines 5-43 in Epard).

In response to applicant's argument that the examiner's conclusion of obviousness is

based upon improper hindsight reasoning, it must be recognized that any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so

long as it takes into account only knowledge which was within the level of ordinary skill at the

time the claimed invention was made, and does not include knowledge gleaned only from the

applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392,

170 USPQ 209 (CCPA 1971).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness
       or nonobviousness.

5.   Claims 1-9, 47-55, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Epard (US005241625A) in view of Yang (US 20020035596A1).

6.   With regard to Claim 1, Epard describes a method for sending a composite image from a

host computer (10, Figure 3B) to a display computer (20; Col. 11, lines 54-57). QuickDraw (21)

copies bit images to and from any bitmap off-screen (Col. 8, lines 6-10). A QuickDraw is

located in the display computer, as can be seen in Figure 3B. The method comprises breaking

the composite image into one or more sub-images (Col. 6, lines 28-56), wherein each of the sub-

images can fit into the off-screen bitmaps (Col. 6, lines 40-49; Col. 8, lines 6-10); and

transmitting each of the sub-images to the display computer to the off-screen bitmaps (Col. 11, lines 54-57; Col. 6, lines 40-49; Col. 8, lines 6-10).

However, Epard does not teach that the off-screen bitmaps are stored in an off-screen memory with available memory. However, Yang describes a method for sending an image from a host computer to a display computer, the display computer having an off-screen memory with available memory, the method comprising transmitting each of the images to the display computer for storage in the off-screen memory [0017].

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the device of Epard so that the off-screen bitmaps are stored in an off-screen memory with available memory as suggested by Yang because Yang discloses the advantage of reducing the amount of graphical data transmitted between the server and the client, which increases the performance speed [0004, 0005]. Therefore, Yang discloses that modifying the device of Epard to include this off-screen memory would improve the performance of the device of Epard, and therefore gives motivation to combine Yang and Epard. Epard would be modified by having QuickDraw copy bit images to a bitmap off-screen (Col. 8, lines 6-10 in Epard) within an off-screen memory with available memory, as suggested by Yang, so that images can be displayed more quickly, which is the intended purpose of Epard (Col. 3, lines 5-43 in Epard).

7.   With regard to Claim 2, Epard describes that each of the sub-images is a rectangle (Col. 6, lines 50-56).

8.   With regard to Claim 3, Epard describes that a QuickDraw Capture (QDC) module (22,

Figure 3B) transmits sub-images (Col. 6, lines 28-56) to the display computer (20; Figure 3B;

Col. 12, lines 5-23). The QDC SendRect message is sent to the display computer to indicate that

a sub-image of a composite image is being transmitted, the one or more messages containing

data sufficient to reconstitute the sub-image on-screen (Col. 30, lines 49-56; Col. 32, lines 5-7).

9.   With regard to Claim 4, Epard describes that a QuickDraw Capture (QDC) module (22,

Figure 3B) transmits sub-images (Col. 6, lines 28-56) to the display computer (20; Figure 3B;

Col. 12, lines 5-23). The QDC Start message is sent to the display computer to indicate that a

sub-image of a composite image is about to be transmitted (Col. 30, lines 49-56; Col. 31, lines

20-24).

10.   With regard to Claim 5, Epard describes that the sending one or more messages includes

sending one or more messages to the display computer (27, Figure 3B) indicating a width and

height of the sub-image (Col. 28, lines 50-60; Col. 30, lines 12-15).

11.   With regard to Claim 6, Epard describes sending sub-images (Col. 6, lines 50-56) to the

display computer (20, Figure 3B; Col. 11, lines 54-57). Epard describes that the sending one or

more messages to the display computer includes sending one or more messages to the display

computer indicating the transmission of the sub-image of a composite image has been completed

(Col. 26, lines 44-47).

12.   With regard to Claim 7, Epard describes that the sending one or more messages includes

sending one or more messages to the display computer (27, Figure 3B) indicating the position on

the screen to which the sub-image of the composite image is to be displayed (Col. 27, lines 26-

31).

13.   With regard to Claim 8, Epard does not teach determining the amount of memory

available in the off-screen memory. However, Yang describes a thin client system [0002] where

an application server (160, Figure 1) locally executes an application program and provides the

application output data to clients/network users (118) who then display the results on a display

screen coupled to their local computer [0003]. The method includes determining the amount of

memory available in the off-screen memory [0082].

It would have been obvious to one of ordinary skill in this art at the time of invention by

applicant to modify the device of Epard to include determining the amount of memory available

in the off-screen memory as suggested by Yang because Yang suggests that this is needed so that

the host computer does not form an off-screen surface larger than the display computer's

available off-screen memory [0082].

14.   With regard to Claim 9, Epard does not teach that the determining includes receiving an

indicator of the amount of memory available in the off-screen memory during or after

initialization of the connection between the display computer and host computer. However,

Yang describes that the determining includes receiving an indicator of the amount of memory

available in the off-screen memory during or after initialization of the connection between the

display computer (118, Figure 1) and host computer (160) [0082]. This would be obvious for the same reasons given in the rejection for Claim 8.

15.   With regard to Claim 47, Claim 47 is similar in scope to Claim 1, and therefore is rejected under the same rationale.

16.   With regard to Claim 48, Claim 48 is similar in scope to Claim 2, and therefore is rejected under the same rationale.

17.   With regard to Claim 49, Claim 49 is similar in scope to Claim 3, and therefore is rejected under the same rationale.

18.   With regard to Claim 50, Claim 50 is similar in scope to Claim 4, and therefore is rejected under the same rationale.

19.   With regard to Claim 51, Claim 51 is similar in scope to Claim 5, and therefore is rejected under the same rationale.

20.   With regard to Claim 52, Claim 52 is similar in scope to Claim 6, and therefore is rejected under the same rationale.

21.   With regard to Claim 53, Claim 53 is similar in scope to Claim 7, and therefore is

rejected under the same rationale.

22.   With regard to Claim 54, Claim 54 is similar in scope to Claim 8, and therefore is

rejected under the same rationale.

23.   With regard to Claim 55, Claim 55 is similar in scope to Claim 9, and therefore is

rejected under the same rationale.

24.   With regard to Claim 72, Claim 72 is similar in scope to Claim 1, except that Claim 72 is

for a program storage device readable by a machine, tangibly embodying a program of

instructions executable by the machine to perform the method. Epard describes a program

storage device (22, Figure 3B) readable by a machine, tangibly embodying a program of

instructions (23) executable by the machine to perform the method (Col. 4, lines 65-67; Col. 12,

lines 10-23). Therefore, Claim 72 is rejected under the same rationale as Claim 1.

25.   Claims 10 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epard

(US005241625A) in view of Yang (US20020035596A1), further in view of Caulk

(US005392391A).

26.   With regard to Claim 10, Epard and Yang are relied upon for the teachings as discussed

above relative to Claim 9.

However, Epard and Yang do not teach that the determining further includes receiving any stride requirements from the display computer during or after initialization of the connection between the display computer and host computer. However, Caulk describes receiving pitch requirements from the destination (Col. 9, lines 17-28). Caulk describes an X Windows System (Col. 6, lines 61-65), in which a client computer connects to a host computer, as discussed in the disclosure of this application in the background of the invention [0004]. Caulk relates to display applications (Col. 2, lines 35-40). Therefore, the destination is the display computer. Pitch is the same as stride, as is well-known in the art and taught in many publications, such as Microsoft's website. Therefore, Caulk describes receiving any stride requirements from the display computer during or after initialization of the connection between the display computer and host computer.

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Epard and Yang so that the determining further includes receiving any stride requirements from the display computer during or after initialization of the connection between the display computer and host computer as suggested by Caulk. Stride requirements are needed when accessing surfaces directly to ensure staying within the memory allocated for the dimensions of the surface and staying out of any memory reserved for cache. Additionally, when you lock only a portion of a surface, you must stay within the rectangle you specify when locking the surface. Failing to follow these guidelines will have unpredictable results, such as a garbled display. Stride requirements are well-known in the art, widely used, and can be found in many publications, such as Microsoft's website.

27.   With regard to Claim 56, Claim 56 is similar in scope to Claim 10, and therefore is

rejected under the same rationale.

28.   Claims 11, 12, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Epard (US005241625A) and Yang (US 20020035596A1) in view of Redford (US006049330A).

29.   With regard to Claim 11, Epard and Yang are relied upon for the teachings as discussed

above relative to Claim 1. Epard describes breaking the composite image into one or more sub-

images (Col. 6, lines 28-56) and copying them to the off-screen bitmaps (Col. 6, lines 45-48;

Col. 8, lines 6-10), and Yang describes that the off-screen bitmaps are stored in an off-screen

memory with available memory [0017], as discussed in the rejection for Claim 1.

        However, Epard and Yang do not teach that the breaking includes breaking the composite

image into one or more sub-images, wherein the sub-images are chosen so as to maximize the

number of sub-images that are equal in size to the available memory in the off-screen memory.

However, Redford describes breaking the composite image into one or more sub-images (Col. 3,

lines 31-33). A cumulative memory allocation, which defines the current allowable memory, is

determined each time a new sub-image is processed. The cumulative memory allocation can be

based on the number of sub-images currently processed and an average memory allocation for

each sub-image. The processor module generates a series of data packets for each processed

sub-image. The bits contained in each data packet are counted and the result is added to the

number of bits previously stored in memory to yield a current memory total. The current

memory total is compared to the cumulative memory allocation to determine whether the current

data packet should be written to memory. If the current memory total does not exceed the

cumulative memory allocation, the current data packet is written to memory. If the current

memory total exceeds the cumulative memory allocation, no further data packets for the present

sub-image are written to memory and processing begins on the next sub-image (Col. 2, lines 31-

47). If earlier processed sub-images do not fill the average memory available for each sub-

image, later processed sub-images containing more information can take advantage of the excess

memory for the earlier sub-images (Col. 2, lines 52-55). Therefore, the sub-images are chosen

so as to maximize the number of sub-images that are equal in size to the available memory.

It would have been obvious to one of ordinary skill in this art at the time of invention by

applicant to modify the devices of Epard and Yang so that that the breaking includes breaking

the composite image into one or more sub-images, wherein the sub-images are chosen so as to

maximize the number of sub-images that are equal in size to the available memory in the off-

screen memory as suggested by Redford because Redford suggests that this method ensures that

there is enough room in the memory to store the data and it avoids "memory gaps" (Col. 2, lines

31-51).

30.   With regard to Claim 12, Epard does not teach that the breaking includes breaking the

composite image into one or more sub-images, wherein the sub-images are chosen so as to

maximize the number of sub-images that are equal in size to some fixed width and height.

However, Redford describes breaking the composite image into one or more sub-images (Col. 3,

lines 31-33). The sub-images are chosen so as to maximize the number of sub-images that are

equal in size to the available memory (Col. 2, lines 31-47, 52-55), and therefore are equal in size

to some fixed width and height of the available memory. This would be obvious for the same reasons given in the rejection for Claim 11.

31.   With regard to Claim 57, Claim 57 is similar in scope to Claim 11, and therefore is rejected under the same rationale.

32.   With regard to Claim 58, Claim 58 is similar in scope to Claim 12, and therefore is rejected under the same rationale.

33.   Claims 13 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epard (US005241625A) and Yang (US 20020035596A1) in view of Larson (US006031550A).

34.   With regard to Claim 13, Epard and Yang are relied upon for the teachings as discussed above relative to Claim 1. Epard describes copying from a composite image in a pixmap to a realized window (Col. 50, lines 62-63).

        However, Epard and Yang do not teach that the breaking and transmitting are performed when a copy area command from a composite image in a pixmap to a realized window is recorded. However, Larson describes recording instructions for data access requests (Col. 7, lines 25-27), which are copy area commands. Source pixels can be copied to destination pixels by dividing the block of source pixels into separate blocks (Col. 8, lines 54-59). Therefore, the breaking and transmitting are performed when a copy area command from a composite image to a realized window is recorded.

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Epard and Yang so that the breaking and transmitting are performed when a copy area command from a composite image in a pixmap to a realized window is recorded as suggested by Larson because Larson suggests that this avoids X crossing (Col. 8, lines 54-59). X crossing occurs when the transfer of a block of pixel data crosses an X axis in display memory. Crossing an X boundary incurs an inordinate amount of accesses to the memory, and therefore it is advantageous to avoid X crossing (Col. 2, line 47-Col. 3, line 5).

35.   With regard to Claim 59, Claim 59 is similar in scope to Claim 13, and therefore is rejected under the same rationale.

Prior Art of Record

"Width vs. Pitch"; http://msdn.microsoft.com/library/en-us/directx9_c/directx/graphics/ProgrammingGuide/GettingStarted/Direct3Dsurfaces/widthvspitch.asp.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joni Hsu whose telephone number is 571-272-7785. The

examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER